

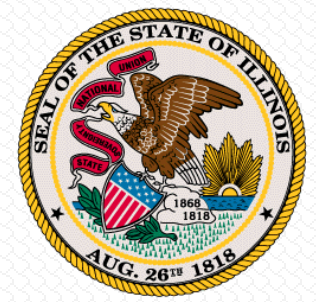


Illinois Broadband Advisory Council

Regular Meeting: December 16, 2020

BROADBAND ADVISORY COUNCIL

MEETING AGENDA



- Call to Order
- Introductory Remarks from the Chair
- Approval of Minutes
- Office of Broadband Updates
 - Grant Programs
 - Partnerships
 - Mapping
- Approach to Broadband Affordability Study
 - John Horrigan, PhD | Senior Fellow, Technology Policy Institute
 - Colin Rhinesmith, PhD | Associate Professor, Simmons University
 - Brian Whitacre, PhD | Professor, Oklahoma State University
- Public Comment
- Next Meeting – February 17, 2021 (tentative)



CONNECT ILLINOIS

[DCEO](#) ▸ [Connect Illinois](#)

Connect Illinois

Governor Pritzker is committed to establishing Illinois as a leader when it comes to technology and innovation. Access to broadband is a critical component of staying ahead of the curve and will improve the lives of families, entrepreneurs, farmers and other Illinoisans who rely on high-speed broadband for everything from healthcare to education.

HOME

[Connect Illinois](#)[Low-Cost Broadband](#)[Making Connections](#)[Federal Broadband](#)[Strategic Plan](#)[Newsletter](#)

MAPS AND DATA

[Drive-Up Wi-Fi Map](#)[Wireline Access Map](#)[Interactive Map](#)[Illinois Century Network](#)



Governor Pritzker launched a statewide initiative in August 2019, Connect Illinois, to expand broadband access across the entire state. Connect Illinois includes a capital investment from Rebuild Illinois, the creation of a Broadband Advisory Council and Broadband Office, and a new program that will provide all Illinois public K-12 students access to high-speed broadband at no charge. The initiative also includes a \$400 million broadband grant program and a \$20 million capital program for the Illinois Century Network, a high-speed broadband network serving K-12 and higher education institutions, among others.

The first round of funding was announced in June 2020. [Please see more information on the announcement.](#)

For more information on the Connect Illinois launch, [click here.](#)

Illinois Broadband Grant Program

Rebuild Illinois, the Illinois infrastructure program, includes \$400 million to the Department of Commerce and Economic Opportunity for a statewide broadband deployment grant program. This appropriation will begin to expand access to reliable, high-speed internet service statewide. According to the USDA, fully utilizing digital technologies within the agriculture industry could create approximately \$47 to \$65 billion annually in additional gross benefit for the U.S. economy.

Illinois Century Network

DIGITAL EQUITY GRANTS

[Communities Rd 1](#)[Communities Rd 2](#)[Navigator NOCO](#)[READY NOFO](#)[Webinar](#)

BROADBAND GRANTS

[Rd 1 Summaries](#)[Rd 2 NOFO](#)[Rd 2 Application Packet](#)[FAQs](#)

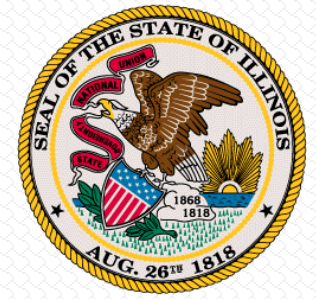
ADVISORY COUNCIL

[Membership](#)



CONNECT ILLINOIS

BROADBAND AFFORDABILITY STUDY



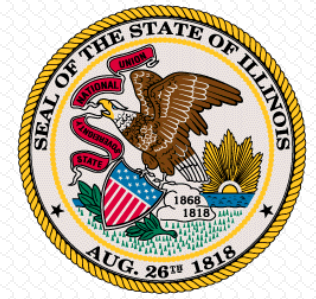
Research Team:

- John Horrigan, PhD
Senior Fellow, Technology Policy Institute
- Colin Rhinesmith, PhD
Associate Professor, Simmons University
- Brian Whitacre, PhD
Professor, Oklahoma State University



CONNECT ILLINOIS

GRANTS + PROGRAMMING



Infrastructure

- Connect Illinois Broadband Grant Program (Rd 2)

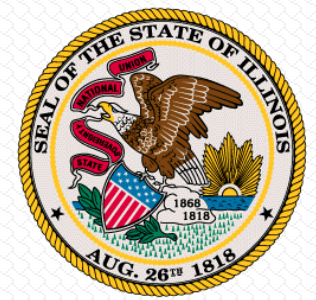
Digital Equity

- Digital Navigator Program
- Broadband READY Grant Program
- Illinois Connected Communities (Rd 2)



CONNECT ILLINOIS

BROADBAND AFFORDABILITY STUDY



- Illinois General Assembly (SB 2135), May 2020
- In pursuit of universal broadband access goal, study:
 - Free access to all residents through grant program expansion
 - Affordable access to all residents
- Study must include analysis of universal access in areas of poverty and areas where existing broadband infrastructure is insufficient for high-speed access
 - Should include discussion of Broadband Strategic Plan initiatives
 - Identify new streams of state, federal, and P3 revenue
 - Recommended schedule for implementation
- Report on findings and recommendations due Jan 1, 2021

ARTICLE 10. BROADBAND ACCESS

22 Section 10-5. The Broadband Advisory Council Act is
amended
23 by adding Section 25 as follows:

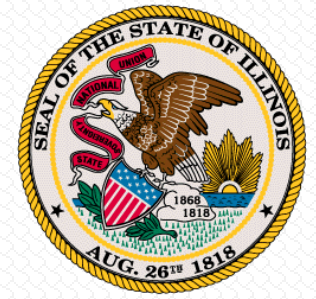
SB2135 Enrolled - 4 - LRB101 09971 HEP 55073 b

1 (220 ILCS 80/25 new)
2 Sec. 25. Universal no-cost broadband Internet access.
3 (a) In furtherance of the purposes of this Act to expand
4 broadband service to unserved rural and urban areas of this
5 State and to achieve universal broadband service and Internet
6 access for the residents of this State, the Broadband Advisory
7 Council shall study the goal of providing free access to all
8 residents of this State to broadband service through the
9 expansion of the state broadband competitive matching grant
10 program. The Broadband Advisory Council shall also study the
11 alternative goal of providing affordable access to all
12 residents of this State to broadband service. The Office of
13 Broadband within the Department of Commerce and Economic
14 Opportunity shall support and assist the Council in the
15 development of the study.
16 (b) The study must include establishing access to broadband
17 service in zip codes identified as having high levels of
18 poverty and in the areas of the State without the
19 infrastructure necessary to meet the requirements for
20 high-speed access to the Internet. To the extent possible, the
21 study shall consider the incorporation and expansion of the
22 initiatives established in the Connect Illinois Broadband
23 Strategic Plan. The Council's study shall identify existing and
24 new streams of State, federal and private-public partnership
25 revenue to underwrite the creation of necessary infrastructure
26 and purchase unlimited broadband Internet access to be



BROADBAND AFFORDABILITY STUDY

INTERNET + TECHNOLOGY ADOPTION



- Data sources:
 - 2019 American Community Survey
- Metrics:
 - Wireline broadband subscriptions at home
 - Computer ownership (either laptop or desktop)
 - Access to either a computer or a tablet device
- Focus of analysis:
 - Adoption across Illinois' 10 economic development regions
 - Socio-economic factors, i.e., income, race/ethnicity, age, education, households with children under 18



BROADBAND AFFORDABILITY STUDY

KEY FINDINGS: ADOPTION



- 70.4% of Illinois households subscribe to wireline high-speed internet service
 - This means that approximately 1.4 million Illinois households do not subscribe such service
- 77.0% of households have a desktop or laptop computer
 - This means about 1.1 million Illinois households lack computers of this sort
- 82.6% of Illinois households have either a computer (desktop or laptop) or a tablet computer
 - That comes to some 847,000 households without any of those devices



BROADBAND AFFORDABILITY STUDY

KEY FINDINGS: ADOPTION



- In economic development district 4 (Northeast), 74.7% of households subscribe to broadband—compared with 61.9% elsewhere in state.
 - Southern region (8) has a 47.0% home subscription rate.
 - The Southeastern region (7) has a 57.5% subscription rate.
- Other notable data points:
 - 44.4% of low-income household subscribe to home wireline service
 - 55.7% of those age 65 and older have wireline subscriptions
 - 57.9% of African American households subscribe to broadband
 - 63.4% of Latino households have home wireline subscriptions
 - 79.8% of households with children have wireline service
 - That's a “homework gap” of 285,000 Illinois households.
- Income a factor for rural and non-rural Illinois residents:
 - 44.6% of metro low-income residents do not subscribe
 - 43.5% of rural Illinois households do not subscribe to home wireline service



BROADBAND AFFORDABILITY STUDY

METHODOLOGY



- Estimating cost of free universal broadband (short-term)
 - Group all IL households into 4 categories (2019 ACS data): 4.866M households
 - Connected, with Device (CD) 72%
 - Device Deficient (DD) 4%
 - Internet Insufficient (II) 10%
 - Fully Disconnected (FD) 14%
 - Estimate cost of connecting each group
 - Market rate broadband service for CD
 - Device / connectivity options for DD, II, FD
 - Low / high range for each (annual costs)
 - Also broken into estimates for 10 Economic Development regions

Short-term solution:
Hotspots, devices provided to
households lacking access

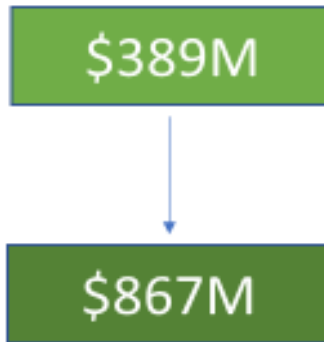


BROADBAND AFFORDABILITY STUDY

METHODOLOGY



Short-term Free Broadband for those lacking device or connection



- Range based on costs to provide devices / connections (will vary by provider & region)

	Internet Insufficient (II)			Device Deficient (DD)	Fully Disconnected (FD)			
	1	2	3	4	5	6	7	8
Access considerations	No access to fixed or cellular	Access to cellular only	Access to fixed	Already has fixed	No access to fixed or cellular	Access to cellular only	Access to cellular only	Access to fixed
Device options	None	None	None	Laptop / Tablet	LTE-enabled laptop / tablet	LTE-enabled laptop / tablet	Laptop / tablet	Laptop / Tablet
Connectivity options	Satellite	Cellular data	Fixed Broadband	None	Satellite	Cellular data	Cellular data	Fixed Broadband
Other hardware	Dish, install	Hotspot device	Modem, router, install	None	Dish, install	None	Hotspot Device	Modem, router, install
Cost/HH	\$850 - \$1,075	\$250 - \$300	\$125 - \$375	\$225 - \$475	\$1,075 - \$1,525	\$550 - \$925	\$475 - \$750	\$350 - \$825
% of Segment	5%	5%	90%	100%	5%	3%	3%	90%
# of HH in IL	25,446	25,446	458,020	178,233	33,430	16,715	16,715	601,739
Lower Bound Cost (\$M)	21.6	6.4	57.3	40.1	35.9	9.2	7.9	210.6
Total:	389.0							
Upper Bound Cost (\$M)	27.4	7.6	171.8	84.7	51.0	15.5	12.5	496.4
Total:	866.8							

Methodology based on Common Sense Media Digital Divide Report (2020)

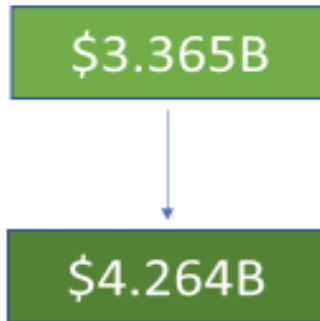


BROADBAND AFFORDABILITY STUDY

METHODOLOGY



Short-term Free Broadband for ALL IL Households (Annual Cost)



Category	Number of Households (2019)	Cost of Free Access	
		Low Estimate (\$M)	High Estimate (\$M)
Fully Disconnected (FD)	668,599	263.7	575.4
Internet Insufficient (II)	508,911	85.2	206.7
Device Deficient (DD)	178,233	40.1	84.7
Connected, with Device (CD)	3,510,271	2,975.8	3,397.0
TOTAL IL Households	4,866,014	3,364.8	4,263.9

- Driven by paying \$70 / month connection costs for households that are already connected



BROADBAND AFFORDABILITY STUDY

METHODOLOGY



- Estimating cost of free universal broadband (long-term)

- Estimate number of households currently lacking service:

- FCC Form 477 data from Dec 2019 (~119,419 unserved)
 - Account for IL investments made after that time
 - FCC Connect America Fund
 - USDA ReConnect
 - Connect IL grants

- Estimate cost of connecting remaining unserved

- Cost / HH from recent grant programs
 - Apply to # of HH that still lack access

- Up-front (infrastructure) cost + annual costs

- Also broken into estimates for 10 Economic Development regions

Thresholds examined:

- 25/3
- 25/3 (wired only)
- 100/20

Long-term solution:
Building fixed connections to all
households lacking service

RDOF Auction Awards
announced 12/7/20 NOT
included

FCC's "Housing Units" ≠ ACS' "Households"



BROADBAND AFFORDABILITY STUDY

METHODOLOGY



Longer-term Estimate of Providing Universal Access (cost of infrastructure)

\$306M

\$485M

Program	# of Awards	Grant Amount	Match	HH Served	Cost / HH
USDA ReConnect	7	89,900,000	-	25,353	3,546
FCC Connect America Fund	4	33,715,374	-	8,958	3,764
Connect Illinois	27	48,123,419	62,594,138	23,061	4,801
Total	38	171,738,793	62,594,138	57,372	4,084

Total Housing Units	No 25/3		No 25/3 wired only		No 100 / 20	
	Num	%	Num	%	Num	%
December 2019	119,419	2.20	308,554	5.73	402,730	7.47
Post-2019 Awards	44,420		44,420		57,372	
5,387,995	74,999	1.34	264,134	4.85	345,358	6.41

- Range based on altering 2 ambitious assumptions:

1) FCC Form 477

+20,000 HH

2) Cost / HH

+ 25% (\$5,105)

Total Housing Units	No 25/3		No 25/3 wired only		No 100 / 20	
	# HH	Cost (\$M)	# HH	Cost (\$M)	# HH	Cost (\$M)
5,387,995	74,999	306	264,134	1,079	345,358	1,410

Range for 2028 Goal of 100 / 20:
\$1.410 B - \$1.865 B



BROADBAND AFFORDABILITY STUDY

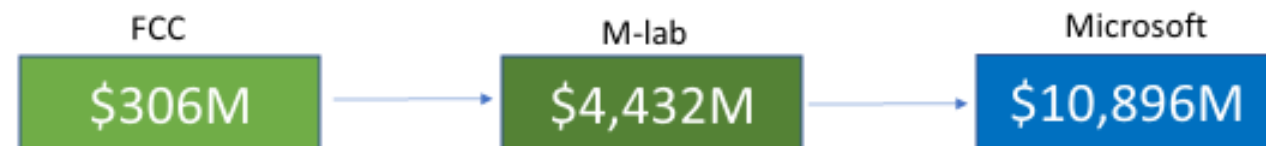
METHODOLOGY



Alternative Estimates from M-lab & Microsoft Data

- FCC Form 477 also criticized for only using *advertised* (not actual) speeds
- Alternative data sets that capture actual user speeds paint a very different picture
 - M-Lab
 - Microsoft

			No 25/3							
			FCC Original		FCC Adjusted		M-Lab		Microsoft	
Reg.	ED Name	Total HH	# HH	Cost (\$M)	# HH	Cost (\$M)	# HH	Cost (\$M)	# HH	Cost (\$M)
	Total	5,387,995	74,999	306	81,513	333	1,085,098	4,432	2,638,735	10,896





BROADBAND AFFORDABILITY STUDY

METHODOLOGY



Longer-term Annual Cost of Providing Universal Access (assuming wired connectivity for all)

\$3.287B



\$3.775B

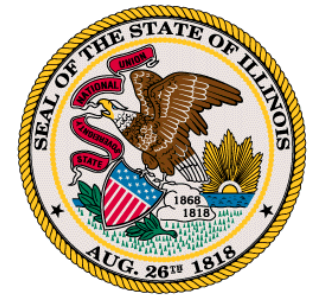
Category	Number of Households (2019)	Access Consideration	Annual Cost / HH	Total Cost (\$M)
Fully Disconnected (FD)	668,599	Access to Fixed	\$350	234.0
Internet Insufficient (II)	508,911	Access to Fixed	\$125	63.6
Device Deficient (DD)	178,233	Laptop / Tablet	\$225	40.1
Connected, with Device (CD)	3,510,271		\$840	2,948.6
TOTAL IL Households	4,866,014			3,286.4

- Still dominated by cost of paying connection costs (\$70 / month) for HH that already have access



BROADBAND AFFORDABILITY STUDY

METHODOLOGY



- Estimating cost of affordable universal broadband
 - Similar methodology as short-term approach above, but considering:
 - \$10 / month for all households
 - \$10 / month only for low-income households
 - \$25 / month for all households
 - \$25 / month only for low-income households
 - Annual costs of subsidies estimated
 - Also broken into estimates for 10 Economic Development regions

Remaining costs assumed to be
subsidized by Connect IL



BROADBAND AFFORDABILITY STUDY

METHODOLOGY



Short-term Affordable Broadband for those lacking device or connection

Consumers Pay \$10 / Month:

\$226M



\$704M

Consumers Pay \$25 / Month:

\$77M



\$460M

	Internet Insufficient (II)			Device Deficient (DD)	Fully Disconnected (FD)			
	1	2	3	4	5	6	7	8
Access considerations	No access to fixed or cellular	Access to cellular only	Access to fixed	Already has fixed	No access to fixed or cellular	Access to cellular only	Access to cellular only	Access to fixed
Device options	None	None	None	Laptop / Tablet	LTE-enabled laptop / tablet	LTE-enabled laptop / tablet	Laptop / tablet	Laptop / Tablet
Connectivity options	Satellite	Cellular data	Fixed Broadband	None	Satellite	Cellular data	Cellular data	Fixed Broadband
Other hardware	Dish, install	Hotspot device	Modem, router, install	None	Dish, install	None	Hotspot Device	Modem, router, install
% of Segment	5%	5%	90%	100%	5%	3%	3%	90%
# of HH in IL	25,446	25,446	458,020	178,233	33,430	16,715	16,715	601,739
Cost / HH	\$850 - \$1,075	\$250 - \$300	\$125 - \$375	\$225 - \$475	\$1,075 - \$1,525	\$550 - \$925	\$475 - \$750	\$350 - \$825
Cost paid by HH (\$10 / mo.)	\$120	\$120	\$120	\$120	\$120	\$120	\$120	\$120
Lower Bound Cost (\$M) - \$10	18.6	3.3	2.3	18.7	31.9	7.2	5.9	138.4
Total:	226.3							
Upper Bound Cost (\$M) - \$10	24.3	4.6	116.8	63.3	47.0	13.5	10.5	424.2
Total:	704.1							
Cost paid by HH (\$25 / mo.)	\$300	\$300	\$300	\$300	\$300	\$300	\$300	\$300
Lower Bound Cost (\$M) - \$25	14.0	0.0	0.0	0.0	25.9	4.2	2.9	30.1
Total:	77.1							
Upper Bound Cost (\$M) - \$25	19.7	0.0	34.4	31.2	41.0	10.4	7.5	315.9
Total:	460.1							



BROADBAND AFFORDABILITY STUDY

METHODOLOGY



Short-term Affordable Broadband for All Households (annual costs)

Consumers Pay \$10 / Month:

\$2.780B



\$3.680B

Consumers Pay \$25 / Month:

\$2.000B



\$2.804B

Category	Households (2019)	Cost of \$10 / Month Access		Cost of \$25 / Month Access	
		Low Estimate (\$M)	High Estimate (\$M)	Low Estimate (\$M)	High Estimate (\$M)
Fully Disconnected (FD)	668,599	183.4	495.2	63.1	374.8
Internet Insufficient (II)	508,911	24.2	145.7	14.0	54.1
Device Deficient (DD)	178,233	18.7	63.3	0.0	31.2
Connected, with Device (CD)	3,510,271	2,554.6	2,975.8	1,922.7	2,344.0
TOTAL IL Households	4,866,014	2,780.9	3,679.9	1,999.8	2,804.0

- Still dominated by subsidizing costs (\$70 / month) for HH that already have access



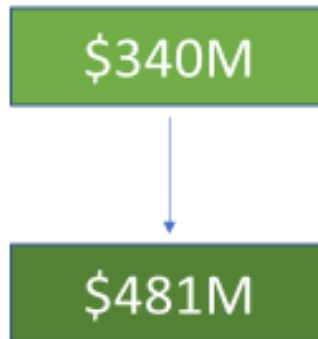
BROADBAND AFFORDABILITY STUDY

METHODOLOGY



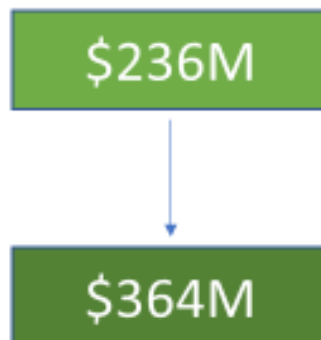
Short-term Affordable Broadband for HH in Poverty (annual costs)

Consumers Pay \$10 / Month:



Category	Households (2019)	Cost of \$10 / Month Access		Cost of \$25 / Month Access	
		Low Estimate (\$M)	High Estimate (\$M)	Low Estimate (\$M)	High Estimate (\$M)
Fully Disconnected (FD)	149,796	41.1	110.9	14.1	84.0
Internet Insufficient (II)	83,423	4.0	23.9	2.3	8.9
Device Deficient (DD)	9,769	1.0	3.5	0.0	1.7
Connected, with Device (CD)	408,297	294.0	343.0	220.5	269.5
TOTAL IL Households in Poverty	651,285	340.1	481.3	236.9	364.0

Consumers Pay \$25 / Month:



- Note that costs for only those without connections is significantly lower:
- \$46M for \$10 / month
- \$16M for \$25 / month




QUESTIONS?

Matt Schmit | Deputy Director

Department of Commerce & Economic Opportunity
Illinois Office of Broadband | broadband@Illinois.gov



PUBLIC COMMENT



NEXT MEETING

FEBRUARY 17, 2021



ADJOURN